

# journal

An information brochure from Balluff **0904**



With over 50 years of sensors experience, Balluff is a worldwide leading sensor specialist with an own line of connectivity products for every area of factory automation. With headquarters near Stuttgart and 54 representatives and subsidiaries, Balluff is expertly represented on every continent in the world.

**Balluff stands for comprehensive systems expertise from a single source, continuous innovation, the most modern technology, the highest quality and greatest reliability.**

And more than that: for distinct customer orientation, i.e. custom-tailored solutions, fast worldwide service and outstanding applications assistance. To this end more than 2200 employees are engaged around the globe.

High-quality, innovative products – tested in our own accredited laboratory and produced in compliance with DIN ISO 9001 (EN 29001) – are a supporting foundation of optimized value creation for our customers and reliable partnership with need-driven delivery and logistics.

Balluff masters the entire range of technology with every operating principle. Whether electronic and mechanical sensors, rotary and linear transducers, identification systems or optimized connectivity products for high-performance automation – Balluff products can be used anywhere in the world. All provide the prerequisite for meeting the demands of the global marketplace in higher performance at less cost. Including in the most demanding areas. No matter how demanding the customer requirements are, the company provides state-of-the-art, reliable solutions.



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Maximum flexibility with high level of safety – BZL  
High-pressure rated sensors in M8 and M5 – BHS  
BNS Wireless  
Electronic cylinder switches BMF 204K/BMF 214K  
Inductive DC 2-wire sensors



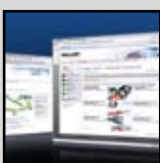
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Balluff Web site  
New: EPLAN macros for Balluff products

## Reliability and hygiene guaranteed Balluff stainless steel line sets standards



**Sensors and systems made of stainless steel offer everything you need to design your production process for safety, stability and hygiene. And perfected fastening and wiring technology in stainless steel guarantees optimal integration.**

Optimized for extreme conditions, the Balluff line of stainless steel products is resistant to aggressive cleaning agents and designed to provide the most reliable sealing (IP 67, IP 68 and IP 69K). These products also meet all the specifications

and directives for the pharmaceutical and foods industry.

- Stainless steel sensors and systems
- From mini-sensors to 30 mm diameter – the largest standard line of inductive sensors in stainless steel
- Proxinox and Steelface. All stainless of the highest quality – for the highest pressures and temperatures
- Photoelectric sensors for the harshest environments. IP 69K rated for resistance and sealing against aggressive media in the cleaning process



- Stainless steel capacitive sensors for use near the product. For reliable, accurate level sensing
- Micropulse transducers for product-contacting use – such as in level sensing. Developed to FDA standards and FDA3A certified
- Industrial RFID systems. Read and write – even through stainless steel covering

Precisely matched fastening and wiring technology in stainless steel and IP 69K is standard.

➔ More information at [balluff.de/edelstahl](http://balluff.de/edelstahl)

## SmartLevel technology takes off! Balluff sensors in Airbus A380

**Airbus is equipping the rest rooms in their 4-engine large-body A380 with a mixer tap. The heart of this exclusive system in the elegant Airbus design are compact, capacitive capacitive sensors from Balluff using the new SMARTLEVEL technology.**

These enable passengers to conveniently select the desired water temperature with the assistance of an LED indicator. The show-stopper: sensing errors are impossible, since these non-contacting sensors ignore clinging dirt, liquid films and soap foam. Only hand-touching the faucet results in a switching operating, even if a wet paper towel covers it.

This extraordinarily reliable switching precision is made possible by a new, patented oscillator technology that automatically compensates for any possible interference factors. Proven in a variety of critical applications, SMARTLEVEL sensors required only slight mechanical modifi-

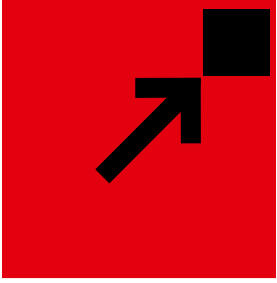


➔ More information at [balluff.de/smartlevel](http://balluff.de/smartlevel)

**SMARTLEVEL**

cations for this specialized application, with the electronics housed and potted into a plastic enclosure. The sensors were developed in the Balluff Competency Center for Capacitive Sensors, with fixtures made of weight-saving titanium supplied

by Franke Aquarotter in Ludwigsfelde, a leading system specialist for water management systems and washroom equipment.



Use the new, high-performance series for optical object detection from long distances: the BOS 50K with reliable red light.

The new block-style sensor has a range of from 200 to 2000 mm and can reliably detect objects from outside the hazardous zones. Even over long distances. And in front of all kinds of backgrounds, so that machine parts can be simply "blanked out." This unrivaled gray value shift makes it the benchmark in its class.

The BOS 50K is also innovative with its custom developed Fresnel lens and a host of other features. You also profit from the user-friendliness of the sensor and from its simple mounting using the universal BMS mounting system.

➔ **Precisely detect objects from up to 2m distance**  
With reliable red light from the BOS 50K



➔ More information at [balluff.de/bos50k](http://balluff.de/bos50k)

➔ **High-pressure rated sensors in M8 and M5 – BHS**  
Small size – big performance



The performance of high-pressure rated sensors now in compact size.

High-pressure rated sensors in M18 and M12 housing have long been successful in hydraulics: for end-of-stroke monitoring on hydraulic cylinders or controlling valve positions. For miniaturized cylinders and valves you get the performance of high-pressure rated cylinders now in M8 and M5 housings as well. With lengths between 30 and 50 mm.

User advantages

- Simple to integrate into the hydraulic actuator
- Position monitoring where never previously possible
- Profit from the know-how of the market leader in inductive high-pressure rated sensors

**BALLUFF**  
sensors worldwide

➔ More information at [balluff.de](http://balluff.de)

➔ **Maximum flexibility with high level of safety**  
Safety for robots with BZL Balluff Zone Limit systems

The highest safety standards are enforced for employees working near robots. Balluff BZL zone limit systems ensure that this does not result in loss of productivity.

BZL systems reliably ensure the most diverse, complementary and redundant robot position monitoring on up to three axes.

Developed for linking with monitoring relays or PLCs, the systems include complete mounting accessories, matching cams and the proven Balluff multiple position switches.

More added value for you

- Achieve high equipment flexibility
- Gain additional work zones
- Ensure the highest safety standards for man and machine
- Reduce robot downtime and increase performance
- While increasing the productivity of your equipment

➔ More information at [balluff.de](http://balluff.de)



➔ **Inductive DC 2-wire sensors**  
For a larger selection of sensors

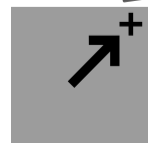
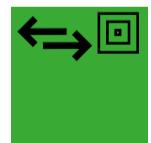
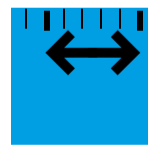
**Inductive 2-wire DC line significantly increased**

Asia is becoming ever more important. For machine builders as well. To supply machines to Asian markets, 2-wire DC switches are often needed. Handle these requirements easily with the greatly expanded line of Balluff 2-wire DC switches.

Choose from

- Normally open and normally closed
- Standard and extended supply voltage range
- Brass and additional weld-splatter resistant housing

Use the inductive 2-wire DC sensors and expand your range of sensors. To clearly enhance your exports to the Far East.



**more added value**

➔ **BNS Wireless – with RF technology for greater applicability**

Mechanical wireless position switches

The rugged Balluff position switches are now available without cable.

Your advantage: RF technology means the sensors can be used where previously impossible. BNS wireless sensors are ideally suited for rotary applications. And are ideal for retrofitting.

More added value for you

- Eliminate costly wiring and fabrication
- Profit from easy retrofitting
- Expand your possibilities
- While increasing the productivity of your equipment



➔ More information at [balluff.de/bnswireless](http://balluff.de/bnswireless)



➔ **Electronic cylinder switches BMF 204K/BMF 214K**

The new benchmark for the C-slot



The BMF 204 and BMF 214 have an impressive, extremely compact design.

**Unbeatably short, highly economical, where space is at a premium**

Binary switching, magnetic field sensitive BMF electronic cylinder switches feature high flexibility. Positions can be detected on virtually any pneumatic cylinder and gripper.

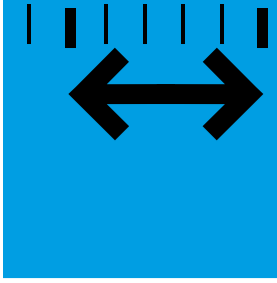
BMF 204K and BMF 214K are flush mountable. With an unrivaled length of just 20 mm they disappear into the C-slot without protruding over the top. Making them ideal for short-stroke cylinders, mini-grippers and other space-critical applications. And the new cylinder switches are particularly economical. They cost hardly more than a conventional reed switch.

The BMF 204K and BMF 214K are also available as V-Twins. Simply two sensors preattached to one connector. They save time and installation cost, take up only one terminal and get by with just one connector.

 **BMF 204 for C-slot e.g. Festo**

 **BMF 214 for C-slot e.g. SMC**

➔ More information at [balluff.de/bmf204](http://balluff.de/bmf204)  
[balluff.de/bmf214](http://balluff.de/bmf214)



## → Optimized real-time performance

### Micropulse AT transducer with Varan-Bus-Interface

Combine the virtues of Varan-Ethernet technology with non-contacting distance measurement.

- And profit from tangible features like
- Wear-free, function-secure IP67 sensor
  - Data transmission in real-time
  - High security
  - Low system cost and
  - Less expenditure thanks to
    - Micropulse AT with 8-pin M12 connector for simple, cost-effective connecting and
    - Cost-optimized VARAN hardware design.

Implementing the VARAN system is also simple. And the open VARAN standard means you are completely flexible. So what are you waiting for? Utilize the advantages of an ideal connection.

→ More information at [balluff.de](http://balluff.de)



## → Micropulse transducers

### ProCompact – for wind and weather

Whenever you need to measure with absolute precision outdoors under extreme conditions, the Micropulse ProCompact is your first choice. Full stainless steel construction, with an IP 68 enclosure rating or even IP 69K with the additional cable protection system, it is ideally suited for wind and weather.

Additional measures such as a separate enclosure, protective painting, special fittings or cables are no longer necessary. The fully welded ProCompact is ideal for example in sensing piston positions on outdoor hydraulic cylinders. Or add reliability to rail equipment: it measures the sway of overhead lines for secure tension control and contributes to flawless energy supply of the rail car.

The ProContact shows off its features espec

- Hydro- and power plant technology
- Gates and locks
- Hydraulic valves and axes outdoors such as sewage treatment plant rakes
- Offshore equipment
- Rail cars and
- High-accuracy level sensing under extrer conditions

→ More information at [balluff.de](http://balluff.de)



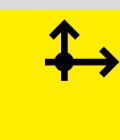
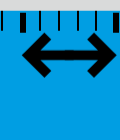
## Award for Innovation 2008

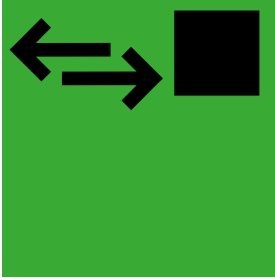


Balluff GmbH was awarded an innovation prize for the high-precision, non-contacting BTL displacement transducer system. The outstanding technical features of the BTL were recognized at Metalworking Shanghai in November 2008.

## → Trade shows/ Exhibitions 2009

- i+e Freiburg
- IMTEX Bangalore
- IFAM Celje
- Maintenance Zurich
- intec Leipzig
- AIMEX Seoul
- Business Solutions ID09 Leeds
- mediSiams Moutier
- AM Expo Charlotte
- M & R Antwerp
- EWEC Marseille
- Magyarregula Budapest
- IPACK-IMA Milan
- MTEC Birmingham
- SIMM Shenzhen
- AUTOMATICON Warsaw
- AMPER Prague
- Manutencao Joinville
- CIMT Beijing
- MOCON s'-Hertogenbosch
- Hannover Messe Hannover
- MDA Hannover
- Euro-ID Cologne
- PACKEX Toronto
- Belgrade Technics Fair Belgrade
- National Manufacturing Week Melbourne
- INTERTECH Dornbirn
- LIGNA Hannover
- Chinaplas Guangzhou
- FEIMAFE Sao Paulo
- MSV Nitra Nitra
- METALLOBRABOTKA Moscow
- Profibus & Profinet Day Edegem
- Windpower Asia Beijing
- SEMICON West/Intersolar San Francisco
- ProPack China Shanghai
- GoAutomation Basel
- HI Messen Herning
- MSV Brno Brno
- Motek Stuttgart
- Assembly Technology Expo Rosemont
- Automaatio Helsinki
- Elektrotechnik Utrecht
- International Technical Fair Plovdiv
- Fachpack Nuremberg
- EMO Milano
- PACK Expo Las Vegas
- SMART Automation Linz
- Scanautomatic Stockholm
- MOCON Brussel
- The Safety Sydney
- TECNIEPO Barcelona
- PTC Asia Shanghai
- Norges Varemesse Lillestrom
- M & R Namur
- MWSC Shanghai
- TIB Bucharest
- ELEKTRONIKA Ostrava
- FABTECH/Metalform Chicago
- Protech Wroclaw
- SPS/IPC/DRIVES Nuremberg
- System Control Fair Tokyo





## → Balluff Industrial 868 MHz RFID BIS U

The right data at the right time at the right place

**100 % quality and maximum reliability even a long distance.**

Easily manage the information flow of modern logistics processes. With Balluff Industrial RFID BIS U. Unlimited read/write cycles ensure flexible, fast communication. Even for high-dynamic applications.

BIS U thereby ensures the quality of your intralogistics and, with up to 6 m or range, covers even great distances. The non-contact 868 MHz UHF identification systems cover your entire material flow: from goods receipt to inner-plant transport to documentation at the individual stations. And economically, since BIS U can process multiple data carriers at once. Regardless of how you orient the data carriers – the circular field of the dipole antenna gives you flexibility. Our rugged BIS U systems are simple to integrate into host controller systems: worldwide standards are not only the newest technology, they also bring investment security.

Ensure transparent material flow and efficient logistics:  
Balluff Industrial RFID BIS U

The benefits to you

- Reliable identification over long distance
- Simultaneous detection and processing of multiple data carriers
- Fastest data processing even in dynamic applications
- More process transparency



→ More information at [balluff.de](http://balluff.de)



## → Tool coding with Industrial RFID – Tool-ID

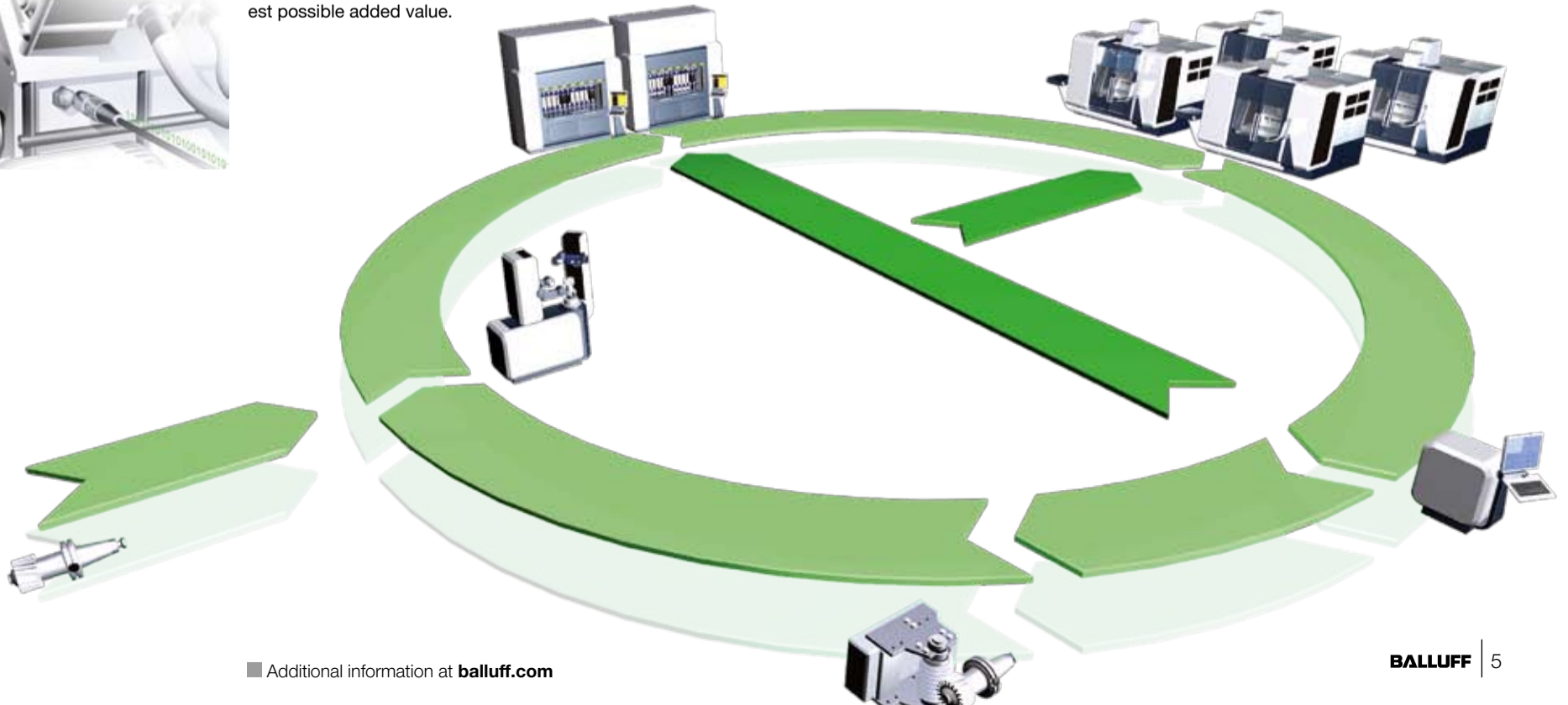
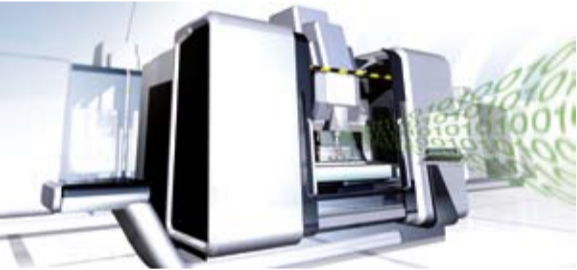
**More efficiency through improved processes**

Balluff Industrial RFID used in modern production applications ensures maximum tool utilization and high machine up-time. Tool identification with Industrial RFID makes incorrect tool allocation or missing tools a thing of the past. All the tool-relevant data are stored without contact on a data carrier embedded in the tool holder. Automatic loading into the system memory means all the data are always correct. And always current, since they are continually updated when loading and unloading the tool. Balluff Industrial RFID systems provide extremely reliable and complete tool data to guarantee flawless operation.

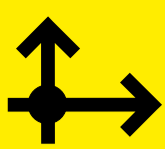
Capable of integration into all commonly used machine controls, our Industrial RFID systems ensure flexible and reliable communication in tool management. Absolutely without contact and maintenance-free. Tools are always accompanied by their individual data so they can be optimally used and managed.

Balluff Industrial RFID supports your tool management and not only simplifies your data management but also increases the quality of your production process. While improving the efficiency and cost-effectiveness of your equipment. Optimal tool utilization with Balluff Industrial RFID provides the greatest possible added value.

→ Work out the numbers!  
Go to [balluff.de/tool-id](http://balluff.de/tool-id)  
to see your individual savings potential.



■ Additional information at [balluff.com](http://balluff.com)



## → Economically connect BTL transducers to Profibus – P111 Module

**Save time. Reduce your production costs.**

Take full advantage of the high functionality of the BTL Micropulse transducer systems. Connect 4 BTL transducers with up to 4 freely programmable magnets/BTL. Rely on measuring accuracies in the  $\mu$ -range. With improved shock and vibration immunity: The BTL is rugged and designed for industrial use, precise and reliable, non-contacting and wear-free.

All the settings and parameters are managed conveniently via Profibus from the controller for up to four BTL transducers with P111 interface. This guarantees you fast startup and rapid replacement when service is needed. Various available form factors means Balluff Micropulse transducers are used in a variety of applications: In the profile style housing with floating or captive magnet on machine frames, or in the rod style for hydraulic cylinders.

Even directly in the pressure area, since the rugged waveguide is protected in a high-pressure rated (up to 600 bar) stainless steel tube. In addition to the 4 BTL transducer systems, you can connect up to eight sensors (inputs) or four sensors with analog output. For the complete solution with IP 67 protection, Profibus I/O modules, Profibus modules with IO-Link interface and all the accessories such as cable, termination resistors, power plugs and cable are available.



→ More information at [balluff.de](http://balluff.de)

- Save time with fast startup and simple parameter setting
- Increased reliability with high accuracy
- Greater efficiency through direct field bus connection and more functionality
- Stroke lengths up to 7500 mm
- Connect 4 BTL with up to 4 magnets/BTL

## → Balluff connectors BCC Connectivity in support of automation



**By partnering with the largest sensor manufacturer you not only get technological variety with all the operating principles. Comprehensive systems expertise also gives you access to your own, complete industrial connectivity product line.**

Use Balluff BCC connectors to simply and easily implement your designs. And benefit from such helpful details as a highly visible detent guide on the grip for easy orientation. Or LEDs which are visible from any direction, simplifying installation even under challenging light conditions.

And you get connection technology that you can use profitably in your entire automation system

- High quality with regional standards
- Perfectly matched to sensors and systems
- For fast, simple connection
- For the most demanding requirements, fully tested in Balluff's own testing laboratory

→ More information at [balluff.de/bcc](http://balluff.de/bcc)

**BALLUFF**  
sensors worldwide

## → Non-contact energy and data transmission – BIC

**BIC Balluff inductive couplers – for the highest degree of flexibility. Whenever modules need to be quickly disconnected and reliably reconnected, you are on the safe side with BIC Balluff inductive couplers.**

With these quick-disconnect units you not only meet new demands quickly and with extreme flexibility. Also transmit power and signals over an air gap of 5mm fast, reliably and with high performance. Retrofitting is simple: BIC is plug-and-play. Your maintenance expenditure is reduced to a minimum. Because cable breaks and mechanical wear are a thing of the past.

- Take advantage of additional features
- Simple wiring of rotary index tables, interchangeable stamping heads, etc.
  - Plug-in connection for M12
  - Drive capacitive loads
  - More power in the same size

And profit from the IO-Link interface, which allows up to 16 sensors per system and lets you connect to the bus world. Choose from a variety of power classes in the compact housing – just the way you need it.



➔ **Panel module**  
**Profibus-IO-Link**  
IO-Link-  
panel module

**New IO-Link panel module for easy startup**

Simplify installation and startup and profit from cost-effective cabling with the Profibus-IO-Link panel module. Developed for use in small to mid-sized machines and equipment, it is ideal for centralized wiring concepts and, with IO-Link sensor hub modules, meets the requirement of modular construction. Now the machine and equipment can be checked before they leave the plant and brought into service on-site with no additional wiring effort.

The IO-Link panel module is particularly interesting where expensive connectors would otherwise be needed for routing the cables. The module provides four IO-Link ports on the outer panel. Simply connect IO-Link sensor hubs or IO-Link capable sensors here to create efficient, cost-effective wiring using standard cables. The supply voltage or the Profibus interface is connected inside the panel.

Another feature: separate actuator supply. This allows actuators such as hydraulic valves/pneumatic valve manifolds to be turned off separately.



➔ More information at [balluff.de/io-link](http://balluff.de/io-link)

➔ **Valve plug** – the innovative solution for driving valve manifolds

IO-Link



**A 3-conductor cable is all you need!**

With IO-Link you send signals and supply voltage over just one cable. You control up to 24 valves cost-effectively and with full noise immunity, yet with full diagnostics functionality. Access the valve coils directly via Profibus and IO-Link.

To install, simply plug into the valve manifolds and connect the standard sensor cable to a Profibus-IO-Link master. Done! Plug and play. Error-free.

➔ More information at [balluff.de/io-link](http://balluff.de/io-link)

➔ **Profibus-IO-Link-Master**

IO-Link-Master for tight mounting spaces – rugged and compact


In tight spaces and wherever dust, water or oils are present or mechanical damage threatens: This is where the Profibus-IO-Link Master is in demand.



The slim distributor box in the rugged metal housing is highly robust. Small yet versatile, it is ideal for IO-Link capable sensors such as pressure or distance sensors, or when you need to connect sensor hubs, control panels or actuators (valve manifold units). Using proven M12 connection technique. This Profibus-IO-Link Master is available with two or four IO-Link ports. This means in combination with IO-Link sensor hubs you can connect up to 68 sensors. And unused IO-Link ports can be used as standard in- or outputs. Which means you are fully utilizing your system – especially in tight situations.

➔ More information at [balluff.de/io-link](http://balluff.de/io-link)



 **IO-Link**

➔ **M8 sensor hub – new**  
Easy installation with IO-Link



Save time and lower the cost of installing, maintaining and operating your equipment. With the new space-saving Balluff M8 Sensor Hubs with IO-Link. Anywhere space is at a premium, with up to 16 inputs available in a compact unit.

Simply connect the M8 Sensor Hubs. With a 3-conductor standard cable to a Profibus or IO-Link splitter. You'll profit from the ease of handling. And – as with all IO-Link products – from the thorough diagnostics. Input signals as well as diagnostic data, short circuit, overload or cable break information are available via Profibus. So the new family of M8 Sensor Hubs gives up nothing to the proven M12 Sensor Hub. It communicates effortlessly and directly with Profibus via IO-Link.

**Fast response**

The M8 Sensor Hubs are also amazingly fast. Sending 16 sensor signals for example takes just 2 ms. To ensure that the controller always has current information. Choose from among 4 versions!

➔ More information at [balluff.de/io-link](http://balluff.de/io-link)

IO-Link

➔ **Balluff power supplies**  
For high-performance operation

High-performance power supplies guarantee reliability

Industrial automation is becoming ever more demanding. And the tasks increasingly complex. Efficient operation of equipment and machines demands reliable power sources. With Balluff power supplies you ensure trouble-free operation of your equipment.

Check out these features

- Full product line – choose just what you need
- Short circuit and overload protection in industrial environments
- High uptime for all your devices
- Unlimited, precise power for increased demands
- Long service life for reliable operation
- Worldwide approvals for use anywhere



➔ More information at [balluff.de/netzgeraete](http://balluff.de/netzgeraete)

## → Balluff Web site – Targeted searching with greater convenience

**New services for flexibility and up-to-date information. Getting fast, reliable information has just gotten easier.**

Whether macros for electrical project planning, a database with numerous application examples direct from the practical world, or regular newsletters and RSS feeds with current product information, the multi-language Balluff Web site offers you new possibilities for targeted searching: in German, English, French, Spanish, Italian and Japanese. Simple and clear. For rapid information and reliable support in your work. Convenience and accuracy. Whenever you need it.

→ More information at [balluff.de/newsletter](http://balluff.de/newsletter)

### Solutions for industry – database with numerous examples from actual applications

Bottling and packaging, hydraulics and pneumatics, automotive and energy, wood or metal: see from practical applications how versatile Balluff sensors and systems are in countless areas. And exactly how they are used. Most of the applications are animated, so that you can truly get the picture. Use already proven applications – for your own inspiration.

→ More information at [balluff.de/applikationen](http://balluff.de/applikationen)



### Always up-to-date with newsletters and RSS

Free information? Right to your e-mail inbox? Without any effort on your part? Not entirely, since for RSS feeds you do need to specify the topics of interest: new products, trade shows or press releases. But the rest you can leave to us. And RSS – Really Simple Syndication – informs you of new things on our Web site as soon as they go online. Completely automatically. Just the way you want it. And with maximum flexibility. Because RSS works equally with computers and handhelds. Simply continue using your Blackberry and iPhone.

And if you prefer a traditional subscription, simply choose the Balluff Newsletter. Once a month it tells you what's new at Balluff. Learn about technical advances directly from the source.

→ More information at [balluff.de/rss](http://balluff.de/rss)



**Headquarters**  
Germany

### Subsidiaries and Representatives

- Argentina
- Australia
- Austria
- Belarus
- Belgium
- Brazil
- Bulgaria
- Canada
- Chile
- China
- Columbia
- Croatia
- Czech Republic
- Denmark
- Finland
- France
- Greece
- Great Britain/Ireland
- Hong Kong
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- South Africa
- Spain
- Sweden
- Switzerland
- Taiwan
- Thailand
- Turkey
- Ukraine
- USA
- Venezuela



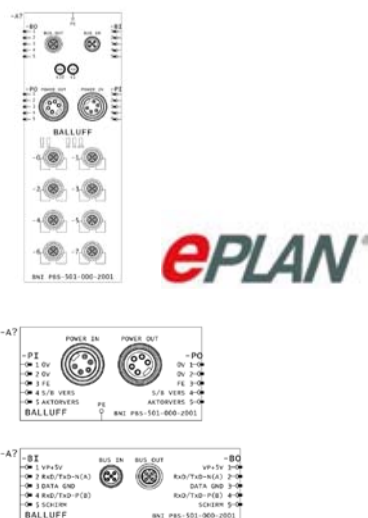
## → New: EPLAN macros for Balluff products Electrical project planning made easy

**3D data for our catalog products for mechanical design have long been available for downloading at no charge in all common CAD formats using PARTserver at [www.balluff.de](http://www.balluff.de). And now users of EPLAN electrical project planning software can also profit from this free service.**

On our Web site planners and designers can download macros for selected Balluff products at no charge and implement them in their design. These macros include all the necessary graphics, technical and commercial information for the electrical design and documentation. Benefit from significant time and cost savings. Thanks to complete, non-redundant data you are assured of smooth transfer of the various engineering phases such as preliminary and detail planning, documentation or maintenance. To shorten overall project time and increase quality. Regardless of whether you need technical macros for creating wiring diagrams, ordering codes for purchasing, presentation images, etc., everything can be added to the CAE project using drag-and-drop.

This free service is available to all EPLAN users. If for some reason any information is missing, simply get in touch with us. And since the commercial data are also integrated directly in the software database, the existing links from ERP systems to article management can still be used.

→ More information at [balluff.de/eplan](http://balluff.de/eplan)



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